REMARKS

The Office raises new grounds of rejection under 35 U.S.C. Section 103 with respect to all of claims 1-10 and 12-20 of this application. Primarily these new grounds of rejection add a secondary reference which is actually a misunderstanding of statements in the introductory portions of applicants' description. The Office characterizes these as "Application Background" and uses same in rejecting the claims. Specific reference is made to the last paragraph on page 1 and lines 13-14 [sic lines 3-14] on page 2 of applicants' application.

Applicants respectfully disagree with the Conclusion in the Office Action stating that applicants previous Amendment necessitated these new grounds of rejection presented in this Office Action. Prior to that Amendment, applicants' claims specified that the apparatus and method concern measuring fruit particles in a matrix. The previous Amendment merely inserted into the claims the definition of matrix which was well understood in the art and which was supported by applicants' description. Under the circumstances, the present Office Action should not have been made final. Applicants respectfully request reconsideration and withdrawal of the finality of this Office Action.

Applicants first of all address the so-called Application Background which has been used as a secondary reference in this Office Action. This includes the last paragraph on page 1, which discusses the prior art practice of the "Fruit Retention Test". This passage clearly states that this Fruit Retention Test removes the food product/fruit particles from the matrix. This destroys the food product which is being measured. As stated, for example, in the first paragraph and in applicants' claims, the food products which are subject to measurement according to the invention are fruit fillings, toppings and the like. These are very commonly known products. They are found in yogurt products (such as fruit-on-the-bottom products), as fillings for baked goods such as sweet rolls and the like. These "fruit in a matrix" products are fruit pieces within a matrix of sugar, starch and/or other materials.

The last paragraph on applicants' page 1 simply states that, in the prior art, the Fruit Retention Test did not measure the fruit particles while they remained in their matrix. Instead, the food product was washed on a screen to **remove the matrix**. The fruit retained on the screen after this washing was then weighed in order to calculate a percentage fruit retention (hence "Fruit Retention Test").

With the present invention, there is no need to remove the fruit particles from the filling or topping so as to separate the fruit particles from their matrix. Instead, the invention measures **fruit particles in a matrix.**

In order to be absolutely certain that there is no misunderstanding as to the meaning of "fruit particles in a matrix", applicants' independent claims are presently amended in order to state that "fruit particles in a matrix" means **without removing the fruit particles from this matrix** that the sample tray of the apparatus is adapted to receive a fruit matrix of **fruit particles which are within a matrix.** The apparatus claims also are amended to state that the camera takes an image **of the fruit particles while they remain within the fruit matrix.** The Apparatus claims reiterate this point even further by stating that the image analyzing software analyzes said image of the fruit particles in order to **measure the fruit particles without having removed them from the fruit matrix.** Similar amendments are made to process claim 12.

In addition, the Office Action states, beginning at line 4 on page 3, for example that:

> Also using computers to analyze images from a camera has been proposed for inspecting cooked fruit pieces containing food products as admitted in the background of the instant application. Page[s] 2, lines [1]3-14.

Whether or not this is a proper interpretation of that passage, this passage does **not** state that it had been known to use this technology for inspecting fruit pieces while they remain in their matrix.

Claims 1, 3-6 and 12 are rejected under Section 103 from Queisser et al. U.S. Patent No. 5,818,953 in view of the above-discussed alleged Application Background.

Queisser has been discussed in the past, and applicants do not repeat these discussions in full. Queisser teaches that fried potatoes, for example, are aligned, preferably perpendicular to a horizontal line scan direction of the camera in order to maximize imaging resolution and accuracy. Clearly, the food products being measured (fried potatoes) are not measured while they are within a matrix as applicants' claim. Queisser's approach is more in line with the Fruit Retention Test discussed above and on page 1 of applicants' description. If fried potatoes were the type of food which is within a matrix (clearly not taught or contemplated by Queisser), requiring this type of alignment of individual food pieces would exclude any such possibility of having a matrix product analyzed by Queisser.

Accordingly, Queisser falls far short of solving the problem solved by applicants' invention, namely measuring fruit particles without removing them from their matrix. Nothing in Queisser

recognizes problems associated with analyzing fruit particles in a matrix. Clearly no solution to this problem is suggested.

In any event, without the secondary reference of the Application Background (as discussed above) providing the teaching which has been suggested by the Office (which the Application Background does not), the obviousness rejection fails.

Claims 2, 7-10, 13, 14, 17 and 18 are rejected under Section 103 from Queisser in view of the alleged Application Background and further in view of Bolle et al. U.S. Patent No. 5,546,475. Regarding the matters noted above, Bolle is no more relevant to the present invention.

Claims 5 and 19 are rejected under Section 103 from Queisser in view of the alleged Application Background and further in view of Sistler et al. U.S. Patent No. 4,975,863. Sistler has no suggestion of fruit particles in a matrix and is no more relevant to the invention and the matters discussed above.

Claims 16 and 20 are rejected under Section 103 from Queisser in view of the alleged Application Background, Sistler et al. and Bolle et al. Even this four-component combination does not recognize the problems solved by applicants, let alone obviously teach the invention.

Claims 1-20 [sic. 1-10 and 12-20] are rejected under Section 103 from Heck et al. U.S. Patent No. 5,845,002 in view of the alleged Application Background and further in view of Sistler. Heck does not discuss fruit particles. Heck has no suggestion of measuring fruit particles while they are within their matrix and without removing them from the matrix. Heck is primarily directed to the problem of sorting whole fruit such as unpeeled citrus fruits into whole fruit of different appearance categories.

Reconsideration and withdrawal of all of the Section 103 rejections are respectfully requested. Alternatively, for the reasons noted above, applicants respectfully request withdrawal of the finality of the present Office Action.

Respectfully submitted,

COOK, ALEX, MCFARRON, MANZO,
CUMMINGS & MEHLER, LTD.

Raymond M. Mehler
Registration No. 26,306

RMM/vk
200 West Adams Street
Suite 2850
Chicago, Illinois 60606
(312) 236-8500

Dated: August 10, 2001

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 1, 10 and 12 to read as follows.

--1. (Twice Amended) Apparatus for the measurement of fruit particles in a matrix without removing the fruit particles from this matrix, comprising:

a substantially opaque cabinet;

a sample tray adapted to received a fruit matrix of fruit particles which are within a matrix selected from the group consisting of a sugar matrix, a starch matrix or a sugar and starch matrix, said fruit matrix is used in fruit fillings, toppings, dairy products or cooked food products;

a camera in the upper portion of said cabinet for taking an image [from] of the fruit particles while they remain within the fruit matrix;

a light source in said cabinet; and

a computer with image analyzing software which analyzes said image of the fruit particles in order to measure the fruit particles without having removed them from the fruit matrix.--

--10. (Twice Amended) Apparatus for the measurement of fruit particles in a matrix without removing the fruit particles from this matrix, comprising:

a substantially opaque cabinet with a non-reflecting inside surface;

a sample tray with a light-transmitting bottom, said sample tray adapted to receive a fruit matrix of fruit particles which are within a matrix selected from the group consisting of a sugar matrix, a starch matrix or a sugar and starch matrix, said fruit matrix is used

in fruit fillings, toppings, dairy products or cooked food products;

a camera in the upper portion of said cabinet for taking an image taking an image [from] of the fruit particles while they remain within the fruit matrix;

a light box with light intensity adjusting switches;

an incident light source; and

a computer with image analyzing software which analyzes said image of the fruit particles in order to measure the fruit particles without having removed them from the fruit matrix.--

--12. (Twice Amended) A process for the measurement of fruit particles in a matrix without removing the fruit particles from this matrix, comprising:

placing in a sample tray a fruit matrix [of], said fruit matrix being fruit particles which are within a matrix selected from the group consisting of a sugar matrix, a starch matrix or a sugar and starch matrix, said fruit matrix is used in fruit fillings, toppings, dairy products or cooked food products;

illuminating said fruit [particles and] matrix so that an image may be obtained in which the fruit particles are distinguishable from the background;

capturing a computer-readable image of at least a portion of said illuminated fruit [particles and] matrix; and

using a computer and an image analyzing software program to analyze [and] said image and obtain information concerning said fruit particles without removing the fruit particles from the fruit matrix.--